

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1-16. (Canceled)

17. (New) A recording medium comprising a digital stream and playlist information, the playlist information including at least one piece of playback section information and playlist mark information, each piece of the playback section information including a pair of an in-time and an out-time and defining therewith a playback section on a playback timeline of the digital stream, the playlist mark information including an identifier of at least one playback section, time information and attribute information, the time information indicating, as a cue-up position, a time point between the in-time and the out-time of each playback section, the digital stream including a video stream and a graphics stream, the graphics stream including at least one interactive control segment, and an object definition segment defining the graphics object, the interactive control segment including at least one piece of button information, each piece of the button information realizing an interactive screen by displaying a graphics object as a button material in a given state and including a button command to be executed by a playback device when a confirmation operation is made on the button material,

the button command being a link command for instructing the playback device to change a playback start position, the link command being in an indirect reference format and indicating a playback start position by indicating a piece of playlist mark information,

the attribute information showing whether a cue-up position indicated by a piece of playlist mark information is a link point designated with a link command or an entry mark, and when a user inputs an operation intended to select a playback position, the playback device referring to a cue-up position that is an entry mark but ignoring a cue-up position that is a link point.

18. (New) The recording medium of Claim 17, wherein
the operation input by the user is one of operations including at least a skip operation and a chapter search operation, the skip operation for selecting a playback start position before or after a current playback position and a chapter search operation for selecting a playback start position to be a chapter.

19. (New) A playback device that controls playback of a digital stream based on playback section information included in playlist information recorded on a recording medium,
the playlist information including at least one piece of playback section information and playlist mark information,
each piece of the playback section information including a pair of an in-time and an out-time and defining therewith a playback section on a playback timeline of the digital stream,
the playlist mark information including an identifier of at least one playback section, time information and attribute information, the time information indicating, as a cue-up position, a time point between the in-time and the out-time of each playback section,

the digital stream including a video stream and a graphics stream,

the graphics stream including at least one interactive control segment, and an object definition segment defining the graphics object,

the interactive control segment including at least one piece of button information, each piece of the button information realizing an interactive screen by displaying a graphics object as a button material in a given state and including a button command to be executed by a playback device when a confirmation operation is made on the button material,

the button command being a link command for instructing the playback device to change a playback start position, the link command being in an indirect reference format and indicating a playback start position by indicating a piece of playlist mark information,

the attribute information showing whether a cue-up position indicated by a piece of playlist mark information is a link point designated with a link command or an entry mark,

the playback device comprising:

a reading unit operable to read, one by one, sections of the digital stream recorded on the recording medium;

a playback unit operable to play back a read section of the digital stream;

a state register operable to record, among playback sections defined by the playback section information, as a current playback section, a playback section to be played back; and

a control unit operable to control the reading unit to perform a cue-up operation, wherein the cue-up operation performed by the control unit is one of operations that include at least

an operation that is performed when a user inputs an operation intended to select a playback position, to ignore a position specified by the playlist mark information as a link point

and converting time information of a position specified by the playlist mark information as an entry mark into an address in the digital stream, and

an operation that is performed when the control unit decodes a link command, to convert time information of a position specified by the playlist mark information as an entry mark or a link point into an address in the digital stream.

20. (New) The playback device of Claim 19, wherein

the operation input by the user is an input of a chapter number to be searched for,

when a piece of playlist mark information corresponding to the chapter number has an attribute of an entry mark, the control unit performs the cue-up operation by specifying as the cue-up position a point to be cued up as indicated by the piece of playlist mark information, and converting time information of the point into the address in the digital stream, and

when the piece of playlist mark information corresponding to the chapter number has an attribute of a link point, the control unit performs the cue-up operation by specifying as the cue-up position a point that is to be cued up as indicated by the next piece of playlist mark information and has an attribute of an entry mark, and converting time information of the point into the address in the digital stream.

21. (New) The playback device of Claim 19, wherein

the operation input by the user is an input of a skipping direction,

when a piece of playlist mark information corresponding to the next or the previous point of a current playback point has an attribute of an entry mark, the control unit performs the cue-up operation by specifying as the cue-up position a point to be cued up as indicated by the piece of

playlist mark information, and converting time information of the point into the address in the digital stream, and

when the piece of playlist mark information corresponding to the next or the previous point of the current playback point has an attribute of a link point, the control unit performs the cue-up operation by specifying as the cue-up position a point that is to be cued up as indicated by the next or the previous piece of playlist mark information and has an attribute of an entry mark, and converting time information of the point into the address in the digital stream.

22. (New) A recording method for recording onto a recording medium, the recording method comprising:
 - creating application data; and
 - recording the application data onto the recording medium,
 - the application data including a digital stream and playlist information,
 - the playlist information including at least one piece of playback section information and playlist mark information,
 - each piece of the playback section information including a pair of an in-time and an out-time and defining therewith a playback section on a playback timeline of the digital stream,
 - the playlist mark information including an identifier of at least one playback section, time information and attribute information, the time information indicating, as a cue-up position, a time point between the in-time and the out-time of each playback section,
 - the digital stream including a video stream and a graphics stream,
 - the graphics stream including at least one interactive control segment, and an object definition segment defining the graphics object,

the interactive control segment including at least one piece of button information, each piece of the button information realizing an interactive screen by displaying a graphics object as a button material in a given state and including a button command to be executed by a playback device when a confirmation operation is made on the button material,

the button command being a link command for instructing the playback device to change a playback start position, the link command being in an indirect reference format and indicating a playback start position by indicating a piece of playlist mark information,

the attribute information showing whether a cue-up position indicated by a piece of playlist mark information is a link point designated with a link command or an entry mark, and when a user inputs an operation intended to select a playback position, the playback device referring to a cue-up position that is an entry mark but ignoring a cue-up position that is a link point.

23. (New) A computer program recorded on a computer readable medium for enabling a computer to perform playback control of a digital stream based on playback section information included in playlist information,

the playlist information including at least one piece of playback section information and playlist mark information,

each piece of the playback section information including a pair of an in-time and an out-time and defining therewith a playback section on a playback timeline of the digital stream,

the playlist mark information including an identifier of at least one playback section, time information and attribute information, the time information indicating, as a cue-up position, a time point between the in-time and the out-time of each playback section,

the digital stream including a video stream and a graphics stream,

the graphics stream including at least one interactive control segment, and an object definition segment defining the graphics object,

the interactive control segment including at least one piece of button information, each piece of the button information realizing an interactive screen by displaying a graphics object as a button material in a given state and including a button command to be executed by a playback device when a confirmation operation is made on the button material,

the button command being a link command for instructing the playback device to change a playback start position, the link command being in an indirect reference format and indicating a playback start position by indicating a piece of playlist mark information,

the attribute information showing whether a cue-up position indicated by a piece of playlist mark information is a link point designated with a link command or an entry mark,

among playback sections defined by the playback section information, a playback section to be played back being recorded as a current playback section,

the computer program enabling the computer to perform:

reading, one by one, sections of the digital stream recorded on a recording medium;

playing back a read section of the digital stream;

controlling the reading, wherein

a cue-up operation performed by the controlling is one of operations that include at least

an operation that is performed when a user inputs an operation intended to select a playback position, to ignore a position specified by the playlist mark information as a link point and converting time information of a position specified by the playlist mark information as an entry mark into an address in the digital stream, and

an operation that is performed when the controlling decodes a link command, to convert time information of a position specified by the playlist mark information as an entry mark or a link point into an address in the digital stream.

24. (New) A playback method for executing a playback control of a digital stream based on playback section information included in playlist information,

the playlist information including at least one piece of playback section information and playlist mark information,

each piece of the playback section information including a pair of an in-time and an out-time and defining therewith a playback section on a playback timeline of the digital stream,

the playlist mark information including an identifier of at least one playback section, time information and attribute information, the time information indicating, as a cue-up position, a time point between the in-time and the out-time of each playback section,

the digital stream including a video stream and a graphics stream,

the graphics stream including at least one interactive control segment, and an object definition segment defining the graphics object,

the interactive control segment including at least one piece of button information, each piece of the button information realizing an interactive screen by displaying a graphics object as a button material in a given state and including a button command to be executed by a playback device when a confirmation operation is made on the button material,

the button command being a link command for instructing the playback device to change a playback start position, the link command being in an indirect reference format and indicating a playback start position by indicating a piece of playlist mark information,

the attribute information showing whether a cue-up position indicated by a piece of playlist mark information is a link point designated with a link command or an entry mark, among playback sections defined by the playback section information, a playback section to be played back being recorded as a current playback section,

the playback method comprising:

reading, one by one, sections of the digital stream recorded on a recording medium;

playing back a read section of the digital stream;

controlling the reading, wherein

a cue-up operation performed by the controlling is one of operations that include at least an operation that is performed when a user inputs an operation intended to select a playback position, to ignore a position specified by the playlist mark information as a link point and converting time information of a position specified by the playlist mark information as an entry mark into an address in the digital stream, and

an operation that is performed when the controlling decodes a link command, to convert time information of a position specified by the playlist mark information as an entry mark or a link point into an address in the digital stream.